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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,726	06/26/2001	Juha M. Heikkila	872.0043.USU	1368

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EXAMINER	
NGUYEN, DUNG X	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 10/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/891,726	HEIKKILA, JUHA M.	
	Examiner	Art Unit	
	Dung X Nguyen	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 3 and 5 - 8* is/are rejected.

7)☒ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *26 June 2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> *A person shall be entitled to a patent unless –*
> *(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

2. **Claims 1, 5, and 8 are rejected** under 35 U.S.C. 102(b as being anticipated by Kent (US patent # 5,532,632).

Regarding claim 1, Kent discloses (figure 1):

- Input nodes (16) for receiving the clock signal (control circuit); and
- Output node (14) for outputting a processed clock signal having a first edge that is synchronized to an edge of the clock signal and a second edge that is varied so as to provide a predetermined processed clock signal duty cycle (abstract and column 2, line 19 to column 3, line 18).

Regarding claim 5, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 8, as followed by the limitations analyzed in claim 5, Kent further discloses that a rising edge is synchronized to a rising edge of the clock signal (column 4, lines 43 – 46).

3. **Claims 1, 5, and 8 are also rejected** under 35 U.S.C. 102(b as being anticipated by Copley et al. (US patent # 5,425,017).

Regarding claim 1, Copley et al. discloses (figure 16 and column 4, line 40 – to column 5, line 20):

- Synchronizer (16) provides input node for receiving the clock signal (control circuit as figure 16); and
- Output node (500) for outputting a processed clock signal having a first edge that is synchronized to an edge of the clock signal and a second edge that is varied so as to provide a predetermined processed clock signal duty cycle.

Regarding claim 5, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 8, as followed by the limitations analyzed in claim 5, Copley et al. further discloses that a rising edge is synchronized to a rising edge of the clock signal (column 23, lines 19 – 21 and column 24, lines 26 - 32).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> *(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

5. **Claims 2 and 6 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Kent (US patent # 5,532,632), and further in view of Lee et al. in "Low-Noise Fast-Lock Phase-Locked Loop with Adaptive Bandwith Control", IEEE Journal of Solid-State Circuits, vol. 35, no. 8, August 2000.

Regarding claim 2, as followed by the limitations analyzed in claim 1, Kent differs from the instant claimed invention that it does not state that wherein the predetermined duty cycle is a nominally 50-50 duty cycle.

However, Lee et al. discloses that wherein the predetermined duty cycle is a nominally 50-50 duty cycle.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Kent and Lee et al. as providing the requirements of the claimed invention for controlling the duty cycle.

Regarding claim 6, the limitations are analyzed in the same manner set forth as claim 2.

6. **Claims 3 and 7 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Kent (US patent # 5,532,632), and further in view of Kardach et al. (US patent application # 2003/0013412 A1).

Regarding claim 3, as followed by the limitations analyzed in claim 1, Kent differs from the instant claimed invention that it does not state that wherein the output node is coupled to baseband circuitry of a wireless communication terminal.

However, Kardach et al. discloses (figure 1a) that wherein the output node is coupled to baseband circuitry of a wireless communication terminal (abstract and page 2, first column, lines 25 – 35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Kent and Kardach et al. as providing the requirements of the claimed invention for converting the signal to baseband signal.

Regarding claim 6, the limitations are analyzed in the same manner set forth as claim 2.

7. **Claims 2 and 6 are also rejected** under 35 U.S.C. 103(a) as being unpatentable over Copley et al. (US patent # 5,425,017), and further in view of Lee et al. in "Low-Noise Fast-Lock Phase-Locked Loop with Adaptive Bandwith Control", IEEE Journal of Solid-State Circuits, vol. 35, no. 8, August 2000.

Regarding claim 2, as followed by the limitations analyzed in claim 1, Copley et al. differs from the instant claimed invention that it does not state that wherein the predetermined duty cycle is a nominally 50-50 duty cycle.

However, Lee et al. discloses that wherein the predetermined duty cycle is a nominally 50-50 duty cycle.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Copley et al. and Lee et al. as providing the requirements of the claimed invention for controlling the duty cycle.

Regarding claim 6, the limitations are analyzed in the same manner set forth as claim 2.

8. **Claims 3 and 7 are also rejected** under 35 U.S.C. 103(a) as being unpatentable over Copley et al. (US patent # 5,425,017), and further in view of Kardach et al. (US patent application # 2003/0013412 A1).

Regarding claim 3, as followed by the limitations analyzed in claim 1, Kent differs from the instant claimed invention that it does not state that wherein the output node is coupled to baseband circuitry of a wireless communication terminal.

However, Kardach et al. discloses (figure 1a) that wherein the output node is coupled to baseband circuitry of a wireless communication terminal (abstract and page 2, first column, lines 25 – 35)..

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Kent and Kardach et al. as providing the requirements of the claimed invention for converting the signal to baseband signal.

Regarding claim 6, the limitations are analyzed in the same manner set forth as claim 2.

Allowable Subject Matter

9. **Claim 4 is objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Saeki (US patent # 6,380,774 B2) discloses a clock control circuit and clock control method.

Nelson (US patent # 4,712,224) discloses an offset digitally controlled oscillator.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (571) 272-3010. The examiner can normally be reached on Monday through Friday from 8:00 AM to 17:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (571) 272-3021. The fax phone numbers for this group is (571) 273-3021.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

DXN

September 30, 2004

STEPHEN CHIN
SUPERVISORY PATENT EXAMINE
TECHNOLOGY CENTER 2600